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Determinants and Rate of Self-Disclosure of Human Immunodeficiency Virus Sero-Status among People Living with HIV/AIDS Attending Antiretroviral Therapy Clinic of a Tertiary Hospital in North Central Nigeria

Déterminants et taux d'auto-divulgation du virus de l'immunodéficience humaine Sero-Status chez les personnes vivant avec le VIH/sida assister à la clinique de thérapie antirétrovirale d'un hôpital tertiaire dans le centre-nord du Nigeria

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ABSTRACT

BACKGROUND AND OBJECTIVE: **Disclosure of human immuno-deficiency virus (HIV) sero-status is a difficult process that involves communication of information about a potentially stigmatizing and transmissible illness. Despite this, it is important for preventing HIV infection and mitigating its impacts. This study aimed to assess the rate and determinants of self-disclosure of HIV sero-status among people living with HIV/AIDS (PLHIV) attending an Antiretroviral Therapy (ART) Clinic in North Central Nigeria with a view to promoting self-disclosure as an intervention for secondary prevention of HIV/AIDS.**

METHODS: **It was a cross-sectional study involving 325 consenting adults aged 18 to 65 years PLHIV attending ART clinic who were recruited using systematic random sampling method. Data collected from the participants include socio-demographic data and medical history. The rate and factors affecting self-disclosure of HIV sero-status were obtained by using a structured interviewer-administered questionnaire. Data was analysed using Statistical Package for Social Sciences (SPSS) version 20.0**

RESULTS: **Most of the participants (66.2%) were females. 96% of the participants had disclosed their HIV sero-status. Self-disclosure of HIV sero-status had statistically significant association with age ($\chi^2 = 12.614$; $p = 0.027$) and gender ($\chi^2 = 4.638$; $p = 0.031$).**

CONCLUSION: **Self-disclosure of HIV sero-status was high among the participants. Being female and within 15–44 year age group were statistically significant factors associated with disclosure of HIV sero-status. Multiple counselling sessions are needed to improve disclosure particularly in males and older PLHIV as self-disclosure of HIV sero-status is a process that requires ongoing support and encouragement. WAJM 2019; 36(3): 246–252.**

Keywords: **HIV infections, HIV seropositivity, Self disclosure, Prevention and Control, North central Nigeria.**

RÉSUMÉ

CONTEXTE ET OBJECTIF: La divulgation de l'état sérologique du virus de l'immunodéficience humaine (VIH) est un processus difficile qui implique la communication d'informations sur une maladie potentiellement stigmatisante et transmissible. Malgré cela, il est important de prévenir l'infection à VIH et d'en atténuer les effets. Cette étude visait à évaluer le taux et les déterminants de l'auto-divulgation de l'état sérologique du VIH parmi les personnes vivant avec le VIH/sida (PVVIH) qui fréquentent une clinique de thérapie antirétrovirale (TAR) dans le centre-nord du Nigeria en vue de promouvoir la divulgation volontaire comme intervention pour la prévention secondaire du VIH/sida.

MÉTHODES: Il s'agissait d'une étude transversale portant sur 325 adultes consentants âgés de 18 à 65 ans, PVVIH fréquentant une clinique de TARV, qui ont été recrutés par échantillonnage aléatoire systématique. Les données recueillies auprès des participants comprennent des données sociodémographiques et des antécédents médicaux. Le taux et les facteurs influant sur l'auto-divulgation de la séropositivité au VIH ont été obtenus au moyen d'un questionnaire structuré administré par un intervieweur. Les données ont été analysées à l'aide du logiciel Statistical Package for Social Sciences (SPSS) version 20.0.

RÉSULTATS: La plupart des participants (66,2 %) étaient des femmes. 96 % des participants avaient divulgué leur séropositivité au VIH. L'auto-divulgation de l'état sérologique au VIH avait une association statistiquement significative avec l'âge ($\chi^2 = 12,614$; $p = 0,027$) et le sexe ($\chi^2 = 4,638$; $p = 0,031$).

CONCLUSION: L'auto-divulgation de la séropositivité était élevée parmi les participants. Le fait d'être une femme et d'appartenir à un groupe d'âge de 15 à 44 ans était un facteur statistiquement significatif associé à la divulgation de l'état sérologique du VIH. De multiples séances de counselling sont nécessaires pour améliorer la divulgation, en particulier chez les hommes et les PVVIH plus âgées, car l'auto-divulgation de la séropositivité est un processus qui exige un soutien et un encouragement continus. **WAJM 2019; 36(3): 246–252.**

Mots-clés: Infections à VIH, séropositivité au VIH, auto-divulgation, prévention et contrôle, centre-nord du Nigeria.

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Abbreviations: AIDS, Acquired Immunodeficiency Syndrome; **ART,** Antiretroviral Therapy; **FMC,** Federal Medical Centre; **HAART,** Highly Active Antiretroviral Therapy; **HIV,** Human Immunodeficiency Virus; **NACA,** National Agency for the Control of AIDS; **PLHIV,** People Living With HIV/AIDS; **SPSS,** Statistical Package for Social Sciences; **UNAIDS,** United Nations Programme on HIV and AIDS.

INTRODUCTION

The HIV epidemic remains a public health concern despite the persistent decline in the prevalence among adults. The national prevalence of HIV infection among people aged 15–64 years in Nigeria was estimated to be 1.4% in 2018, with variations from 0.6% to 3.1% across geo-political zones.[1] An estimated 1.9 million people in Nigeria are infected with HIV with 43% of them achieving viral load suppression.[1] In this regard, Nigeria is slow in her progress towards the 90-90-90 targets towards ending the AIDS epidemic by 2020 set by the Joint United Nations Programme on HIV/AIDS (UNAIDS) to achieve identification of 90% of people living with HIV (PLHIV), ensure 90% of these were accessing antiretroviral therapy (ART) and 90% of these attain viral load suppression.[2]

HIV self-disclosure is defined as the autonomous revelation of one's HIV status to another individual or group of individuals other than medical staff of HIV treatment and care centre.[3] There are different levels of HIV disclosure. They include: disclosure to health care workers for care and support; disclosure to families, friends, co-workers, employers, religious leaders and communities for emotional support; disclosure to partners to prevent onward transmission; disclosure to the general public for "putting a human face" on the epidemic (education, advocacy, money).[4] HIV positive status disclosure is a very sensitive phenomenon. People diagnosed with HIV infection often face difficulties in disclosing their status to other people.[4] This affects efforts of reducing HIV prevalence.

Overcoming the barriers to disclosure remains a formidable challenge for both secondary HIV prevention and early detection of HIV infected individuals. A mathematical modelling analysis showed that sero-status disclosure reduced the risk of HIV transmission by 17.9% to 40.6% relative to non-disclosure. Increasing the disclosure rate from the base-case value of 51.9% to 75.7%, produced a 26.2% to 59.2% reduction in risk of HIV transmission respectively.[5] Furthermore, several studies have shown that self-disclosure of HIV sero-status improves adherence, reduces risky sexual behaviour and improves the general well-being of PLHIV.[6–8]

HIV status disclosure of PLHIV to partners and others is of vital significance to HIV prevention. Thus, the issue of HIV status disclosure needs to be addressed to prevent the spread of HIV infection, promote accessibility to care and treatment programs, attain psycho-social support for patients from relatives and friends, reduce stigma, adhere to treatment and promote safer health behaviour.[8–10] This study aimed to determine the disclosure rate and factors which influence self-disclosure of HIV sero-status among patients living with HIV attending antiretroviral therapy (ART) clinic at Federal Medical Centre (FMC), Keffi.

SUBJECTS, MATERIALS AND METHODS

It was a descriptive cross-sectional study conducted from 1st August 2016 to 30th September 2016 at the adult Antiretroviral Therapy clinic of the FMC, Keffi, North central Nigeria. Adult PLHIV aged 18–65 years registered in the HIV/AIDS treatment and care programme who gave a written informed consent were eligible to participate in the study. HIV positive patients who became aware of their sero-status within four weeks preceding the study were excluded to allow enough time for appropriate cognition and acceptance of their HIV sero-status. Ethical approval for the study was obtained from the institution's Health Research Ethics Committee. (FMC/KF/HREC/089/16)

The minimum sample size of 296 was calculated using the Cochrane Formula for proportions in large populations:

$n = z^2 p (1–p)/d^2$

Where n = minimum sample size

z = value of the standard distribution corresponding to a significant level of α (1.96 for a Confidence level of 95%).

p = expected proportion in the population (prevalence of HIV sero-status disclosure). This study used 74% prevalence of HIV sero-status disclosure among PLHIV attending adult ART clinic from a previous study in Niger Delta, Nigeria.[10]

d = absolute precision which is significant at 0.05.

Therefore $n = 1.96^2 \times 0.74 \times 0.26/0.05^2$

$n = 3.8416 \times 0.74 \times 0.26/0.0025$

$n = 295.65$ (approximated to 296).

Ten percent of the minimum sample size (30) was added to allow for non-response/incomplete response. Therefore, 325 participants were recruited for the study.

The 325 participants were recruited within four weeks through systematic sampling method. The Adult ART clinic ran three days a week with an average of 150 clients booked per clinic day giving a sampling frame of 1,800 clients and a sampling interval of six. From the booking register on each clinic day, the first participant was selected as the first patient for that day. Thereafter, every sixth eligible and consenting participant was selected until the total number was recruited.

The study protocol was explained to them as a group after which informed consent was obtained. A structured questionnaire used to obtain the socio-demographic and clinical data of participants. Self-disclosure of HIV sero-status was measured using the modified version of a questionnaire developed by Stutterheim *et al* for a study on the psychological and social correlates of HIV status disclosure.[11] The HIV sero-status disclosure questionnaire included a series of twelve structured questions which was used to determine how many people the respondent had disclosed his sero-status to since diagnosis; to whom, why and when the respondent disclosed. The reaction of each confidant and how the respondent felt about subsequent disclosure decisions were also explored. Additionally, open-ended items were used to determine the size of their friend and family networks, and how many of those friends and family members were aware of their diagnosis. If a respondent did not disclose to anyone, the reasons for non-disclosure were sought. At the end of the study, participants who had not disclosed their HIV sero-status were given counselling sections to enhance self-disclosure of HIV sero-status.

Data was analysed using the Statistical Package for the Social Sciences (SPSS) version 20.0. The

association between categorical variables were tested using the Chi square and Fisher's exact test. A bivariate analysis was done to determine the presence of a statistically significant association ($p<0.05$) between independent variables and the outcome variable. Multiple logistic regression models were built to identify independent determinants of HIV sero-status disclosure.

RESULTS

The mean age with standard deviation of the study participants was 36.78 ± 8.92 years. A total of 123 (37.8%) participants were between 25–34 years of age, 115 (35.4%) were between the ages of 35–44 years. Only 4 (1.2%) participants were more than 65 years of age.

There were a total of 110 (33.8%) males in the study, and 215 (66.2%) females. The male to female ratio was 1:1.5. Forty (12.3%) of the study participants were single and had never married. The majority 200 (61.5%) of the participants were married, while 33 (10.2%) were either separated or divorced. The remaining 52 participants were either widowed, co-habiting or in a relationship, but not living with a partner. The majority 278 (85.5%) of the study participants were Christians, and 47 (14.5%) were Muslims. A total of 16 (4.9%) of the participants had no formal education, 70 (21.5%) had primary school education and the majority 107 (32.9%) had senior secondary school education. The majority 176 (54.2%) of the study participants earned less than N20,000 per month, 140 (43.1%) earned between N20,000 – N100,000, while one participant earned above N200,000. A total of ten (3.1%) of the participants were students. The majority 102 (31.4%) were civil servants.

Details of the socio-demographic characteristics of the study participants are presented in Table 1.

Table 1: Socio-demographic Characteristics of Study Participants (N: 325)

Variable	Frequency	Percent
Age group (Years)		
15–24	13	4.0
25–34	123	37.8
35–44	115	35.4
45–54	43	13.0
55–64	10	3.1
Gender		
Male	110	33.8
Female	215	66.2
Marital Status		
Single/Never married	40	12.3
In a relationship (Not living with partner)	4	1.2
Co-habiting	4	1.2
Married	200	61.5
Separated/Divorced	33	10.2
Widowed	44	13.5
Highest Level of Education completed		
No formal education	16	4.6
Primary	70	21.5
Junior secondary	35	10.8
Senior secondary	107	32.9
Post-secondary	97	29.8
Occupation		
Civil servants	102	31.4
Traders	92	28.3
Artisans	52	16.0
Farmers	33	10.1
Students	10	3.1
Unemployed	36	11.1
Average Income per Month (Naira)		
≤N20, 000	176	54.2
N20, 001 – N100, 000	140	43.1
N100, 001 – N200, 000	8	2.5
>N200, 000	1	0.3

Rate of Self-disclosure of HIV Sero-status Among Participants

A total of 13 (4%) of the study participants did not disclose their HIV status to other people other than the medical staff at the clinic. However, the majority of the study participants 312 (96%) had disclosed their HIV sero-status to other people. Figure 1 shows the details.

Factors affecting Self-disclosure of HIV Sero-status among the Study Participants

The study found that age and gender were significantly associated with self-disclosure with p-values of 0.027 and 0.031 respectively. However, other factors had no statistically significant association with self-disclosure. Details are shown in Table 2.

Reasons for Disclosure or Non-disclosure of HIV Sero-status among the Participants

Majority of the participants, 190 (60.9%) disclosed their HIV seropositive status because they felt the partner/spouse should know. One hundred participants (32.1%) disclosed their status because they needed emotional support, while a further 64 participants (20.5%) disclosed their status because their partner was also HIV positive. The reasons for disclosure are presented in Table 3.

Of the 13 participants who did not disclose their sero-status, nine (69.2%) feared perceived negative consequences on themselves, eight (61.5%) feared being rejected, and six (46.2%) were afraid of loss of information. The reasons for non-disclosure are presented in Table 4. Most of the participants had more than one reason for disclosure or non-disclosure of their status.

Table 2: Factors affecting Self-disclosure of HIV Sero-status among the Study Participants (N: 325)

Variable	Total	Self-disclosure No.	Self-disclosure Yes	Chi-square	p-value
	No. (%)	No. (%)	No. (%)		
Age group (years)				12.614	0.027*
15–24	13 (14.0)	1 (7.7)	12 (92.3)		
25–34	123 (37.8)	2 (1.6)	121 (98.4)		
35–44	115 (35.4)	3 (2.6)	112 (97.4)		
45–54	60 (18.5)	7 (11.7)	53 (88.3)		
55–64	10 (3.1)	0 (0)	10 (100)		
≥65	4 (1.2)	0 (0)	4 (100)		
Gender				4.638	0.031*
Male	110 (33.8)	8 (7.3)	8 (7.3)		
Female	215 (66.2)	5 (2.3)	210 (97.7)		
Level of Education				3.661	0.454
No formal	16 (4.9)	0 (0)	16 (100)		
Primary	70 (21.5)	5 (7.1)	65 (92.9)		
Junior secondary	35 (10.8)	1 (2.9)	34 (97.1)		
Senior secondary	107 (32.9)	5 (4.7)	102 (95.3)		
Post-secondary	97 (29.8)	2 (2.1)	95 (97.9)		
Marital Status				4.025	0.546
Single/Never married	40 (12.3)	3 (7.5)	37 (92.5)		
In a relationship (Not living with partner)	4 (1.2)	0 (0.0)	4 (100)		
Co-habiting	4 (1.2)	0 (0.0)	4 (100)		
Married	200 (61.5)	7 (3.5)	193 (96.5)		
Separated/Divorced	33 (10.2)	0 (0.0)	33 (100)		
Widowed	44 (13.5)	3 (6.8)	41 (93.2)		
Employment Status				0.465	0.495
Employed	279 (85.8)	12 (4.3)	267 (95.7)		
Unemployed	46 (14.2)	1 (2.2)	45 (97.8)		
Average Income per Month (Naira)				2.062	0.560
< N20,000	176 (54.2)	5 (2.8)	171 (97.2)		
N20,001 – N100,000	140 (43.1)	34 (5.7)	132 (94.3)		
N100,001 – N200,000	8 (2.5)	0 (0.0)	8 (100)		
> N200,000	1 (0.3)	0 (0.0)	1 (100)		
Duration on HAART†				4.900	0.298
< 1 year	14 (4.5)	1 (7.1)	13 (92.9)		
1–5 years	115 (36.9)	7 (6.1)	108 (93.9)		
6–10 years	158 (50.6)	3 (1.9)	155 (98.1)		
11–15 years	23 (7.4)	0 (0.0)	23 (100)		
>15 years	2 (0.6)	0 (0.0)	2 (100)		
Duration of HIV Diagnosis				7.743	0.171
< 1 year	14 (4.3)	1 (7.1)	13 (92.9)		
1–5 years	117 (36.0)	9 (7.7)	108 (92.3)		
6–10 years	155 (47.7)	2 (1.3)	153 (98.7)		
11–15 years	36 (11.1)	1 (2.8)	35 (97.2)		
16–20 years	1 (0.3)	0 (0.0)	1 (100)		
20–25 years	2 (0.6)	0 (0.0)	2 (100)		

**p-value < 0.05 †HAART, Highly Active Antiretroviral Therapy*

Logistic Regression of Factors that Affect Self-disclosure of HIV Sero-status among the Study Participants

Further logistic regression in Table 5 showed that being between age 15 to 44 years was a significant predictor (p = 0.000, OR = 1.913) of self-disclosure of HIV sero-status. Gender was a not significant predictors of self-disclosure of HIV sero-status. However, the odds ratio revealed that the female participants were more likely to disclose their HIV sero-status than male participants. Details are shown in Table 5.

DISCUSSION

The present study showed the rate of self-disclosure of HIV sero-status to be 96%. This finding is similar to the self-disclosure rate of 96% reported by Adeniran *et al* in 2014 among PLHIV also in North Central Nigeria.[12] A similar study in North Eastern Nigeria by Dankoli *et al* in 2014 found a self-disclosure rate of 97.5%.[13] It is also comparable to the study by Shacham in the United States of America which reported a self-disclosure rate of 97%.[14]

The rate of self-disclosure found in this study is higher than previous studies carried out by Titilope *et al* and Ebuenyi *et al* who reported disclosure rates of 61% among PLHIV at the Lagos University Teaching Hospital in South Western Nigeria in 2014 and 74% among PLHIV residing in a resource-limited setting in the Niger Delta Nigeria.[9,10] It was also higher than the rate of disclosure found in other studies in South Africa by Wong *et al* in 2009 and by Lugalla *et al* in 2012 in Tanzania which reported disclosure rates of 87% and 55% respectively.[4,15] Cultural views expressed about the need to involve spouses and other family members in medical decision-making may have contributed to the higher rate of disclosure in the present study. Furthermore, these differences may have resulted from the different methods used to measure rates of disclosure and the time frames used. This study did not set any time frame to ask study participants about HIV sero-status disclosure, therefore the disclosure rate obtained was cumulative.

Age is an important factor in the spread of HIV/AIDS infection. The most productive age groups are mostly affected by the infection.[2] The findings of this study support the clustering of the participants in the actively productive age group.

In the bivariate analysis, there was a significant association between age and the likelihood of self-disclosure of HIV sero-status. Further logistic regression in Table 5 showed that being between 15 to 44 years was a significant predictor (OR – 1.913, 95% CI–1.627–2.250) of self-disclosure of HIV sero-status. This is in agreement with an earlier study in Gombe, North Eastern Nigeria by Dankoli

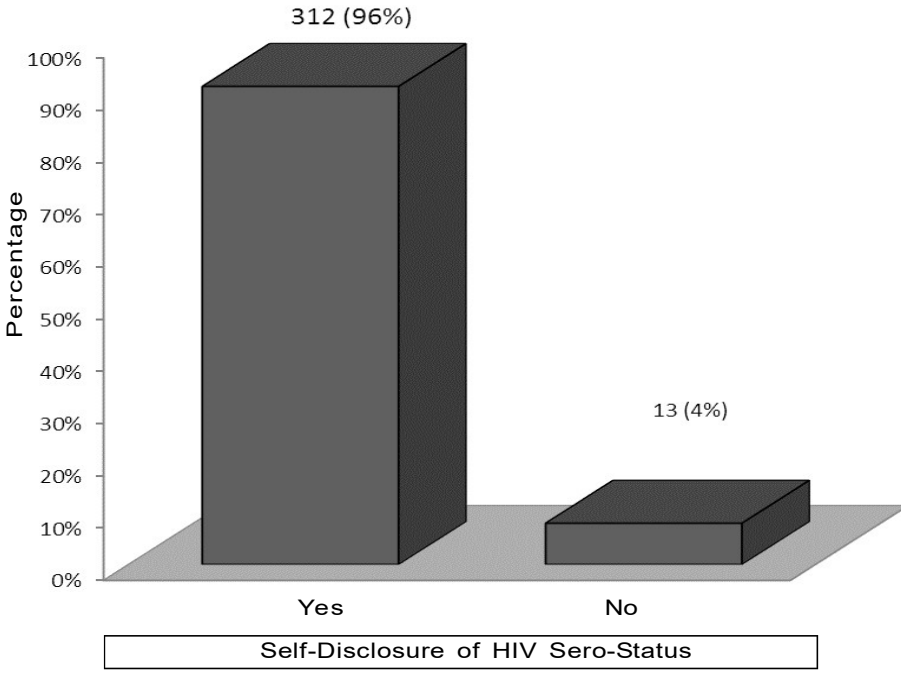

Fig. 1: Rate of Disclosure of HIV Sero-status among the Study Participants.

Table 3: Reasons for Disclosure of HIV Sero-status among the Study Participants (N: 312)

	Frequency	Percent
Because partner should know	190	60.9
Need for emotional support	100	32.1
Because partner is HIV-positive	64	20.5
Need for medical or home care	45	14.4
Encourage partner to get tested	39	12.5
Need for financial support	28	9.0
Desire to protect others	16	5.1
To encourage condom use in future	1	0.3
Others	**43**	**13.8**

Table 4: Reasons for Non-Disclosure of HIV Sero-status among the Study Participants (N: 13)

	Frequency	Percent
Fear of negative consequences for self	9	69.2
Fear of rejection	8	61.5
Loss of control of information	6	46.2
Shame	5	38.5
Fear of negative consequences for family	3	23.1
Lack of confidence	2	15.4
Lack of communication skills	2	15.4
Possibility of subsequent questions regarding how the disease was transmitted	1	7.7

et al in 2014 that reported that PLHIV who were 40 years or younger were more likely to disclose their HIV sero-status.[13] That study had comparable population and age grouping to the present study hence the similarity in the findings. The logistic regression further showed that participants in the age category of 25 to 34 years were more likely to disclose their HIV sero-status compared to other age groups. This finding is comparable to the previous finding in Lagos, Nigeria by Titilope *et al* in 2011 among PLHIV.[9]

The pattern noted in this study may be attributed to HIV awareness and fear of discrimination. Persons in the 25 to 34-year age group are likely to have matured in a generation when the stigma attached to HIV was decreasing.[16] As a result, they would have developed less anxieties concerning stigmatization compared to those above 45 years who would have matured when HIV infected persons were perceived in a highly negative light by most members of the society. Only nine (0.04%) and eight (0.03%) of the 325 participants in this study stated fear of negative consequences and fear of rejection respectively, as the reasons for the non-disclosure of the HIV positive status. A greater level of dependence on family which renders those under 25 years more susceptible to fears of isolation coupled with low emotional maturity may account for the lower rates of disclosure among them.

There were more female participants than males in this study with a male to female ratio of 1:1.5. In the bivariate analysis, there was a significant association between gender and the likelihood of self-disclosure of HIV sero-status, with females more likely to disclose their status than males. This finding agrees with the study by Titilope *et al* in Lagos, South West, Nigeria and Salami *et al* in Ilorin, North Central, Nigeria.[9,17]

The higher proportion of female participants who disclosed their HIV sero-status in these studies could be due to the availability of provider-initiated HIV testing, counselling and prevention services in antenatal settings. This makes women more likely than men to be the first to know their HIV sero-status. Hence necessitating disclosure to their male partners especially to prevent their babies from becoming infected and to protect

Table 5: Logistic Regression of Factors that affect Self-disclosure of HIV Sero-status among the Study Participants

	Self-disclosure		95% Confidence Interval	
	p-value	Odds ratio	Upper Bound	Lower Bound
Gender (Female)	0.223	2.269	0.607	8.484
Age group (years)				
15 – 24	0.000	1.913	1.627	2.250
25 – 34	0.000	9.705	1.722	5.470
35 – 44	0.000	6.083	1.369	2.703
45 – 54	–	1.130	1.130	1.130
55 – 64	1.000	0.670	0.670	–

their own health. On logistic regression, gender was not an indepen-dent predictor of self-disclosure of HIV sero-status. In concurrence with this finding, a study among PLHIV by Amoran in 2012 in Ogun State, Nigeria found no significant association between gender and self-disclosure.[18] A similar study from the USA by Shacham *et al* found no significant differences in disclosure rate in both gender.[14] The urban setting of these studies where traditional values and gender typicality are not emphasised may account for this finding.

More than half (61%) of the participants in this study were married. Marital status was not statistically significantly associated with HIV self-disclosure. However, the bivariate analysis showed that a larger proportion of the single participants did not disclose their HIV status compared to others. This was in agreement with studies among PLHIV in Lagos by Titilope *et al* in 2011, in Ilorin by Salami *et al* in 2011 and in Eastern Ethiopia by Reda *et al* in 2013.[9,17,19] This could be attributed to fear of not getting marital partners and the desire for having children by the single participants. Married people on the other hand, are more likely to disclose especially to their spouses because in many cases, their spouse was already infected or both couple may have been tested together due to sero-sorting. This is a practice whereby individuals seek partners of the same HIV sero-status as a means of coping with HIV among PLHIV as reported by Rhine in 2009 in Northern Nigeria.[20] Furthermore, participants living in union already have a stable relationship with their partners. This creates an environment of mutual trust and support. It therefore facilitates the sharing of information such as HIV sero-status.

In contrast, the study by Dankoli *et al* in North Eastern Nigeria in 2014 found that married respondents were less likely to disclose their HIV sero-status com-pared to the unmarried respondents.[13] Majority of the respondents in that study were Muslims who practised polygamy. Previous studies in North Central and South West, Nigeria had reported the negative effect of polygamy on HIV sero-status disclosure.[17,18] Only 4.9% of the participants in this study had no formal education. This study found that educational level had no statistical significance to self-disclosure of HIV sero-status. This finding is similar to studies by Olagbuji *et al* and Ebuenyi *et al* in South Southern, Nigeria as well as Dankoli *et al* in North Eastern, Nigeria.[8,10,13] Another study in the rural area of Tanzania by Lugalla *et al* in 2015 noted that there was no significant difference in disclosure rates with regards to level of education.[15]

Illiteracy and ignorance may result in the inability of the respondents with low education to appreciate the contribution of disclosure of sero-status to their care. On the other hand, reluctance in adapting to behaviours that are less risky among those with high educational level may also affect HIV sero-status disclosure. In contrast, a study done in South Western, Nigeria by Amoran in 2012 found that respondents with higher education were more likely to disclose their HIV sero-status than respondents with lower education.[18] Individuals with higher education have some level of independence. They have better health seeking behaviour, access to health services and media. Hence they are better informed about the importance of HIV sero-status disclosure.

This study showed that being employed was not statistically significant in self-disclosure of HIV sero-status. This is comparable to findings in previous studies in different parts of Nigeria by Ebuenyi *et al* and Amoran.[10,18] Similar results were also reported among South African women by Makin *et al* in 2008.[21] This finding could be due to PLHIV disclosing their HIV sero-status for psychosocial reasons and not neces-sarily for financial reasons in this era of universally accessible antiretroviral therapy in these settings.

In this study, duration of HIV infection diagnosis was not significant in self-disclosure of HIV sero-status. This was in agreement with studies in Nigeria among PLHIV by Olagbuji *et al* in Benin in 2011, Dankoli *et al* in Gombe in 2014 and Salami *et al* in 2011 in Ilorin which reported similar findings.[8,13,17] This could be explained by the fact that despite the post-test counselling they receive after diagnosis, there are also other factors to be considered by a PLHIV before disclosing the HIV sero-status. These clients have to balance the potential risks and benefits of disclosure based on the importance of the relationships and the level of trust with the confidant.

The present study showed that participants who had been on HAART for a longer period were more likely to disclose their sero-status. All participants (100%) who had been on HAART for more than 10 years had disclosed their HIV sero-status. This in agreement with studies by Salami *et al* in 2011 in North Central Nigeria and Genet *et al* in 2015 in Ethiopia which found higher disclosure rates among respondents with longer duration on HAART.[17,22] This finding could be the result of continuous counselling at each contact of PLHIV with health professionals which is aimed at helping clients to develop healthy behaviours including disclosure of HIV positive sero-status. They also receive information about the benefit of HIV sero-status disclosure from their peers.

CONCLUSION

This study found that majority (96%) of PLHIV attending the ART clinic in FMC, Keffi had disclosed their HIV sero-status. Age group of 15–44 years and female gender were statistically significant factors associated with disclosure of HIV sero-status. However, only age was an independent predictor of self-disclosure. Interventions to encourage self-disclosure of HIV sero-status particularly in males and older PLHIV through multiple counselling sessions are needed to improve timely disclosure, as self-disclosure of HIV sero-status is a process that requires ongoing support and encouragement. Specific training for HIV counsellors and health workers will provide them with the skills necessary to enhance ongoing support for PLHIV.

LIMITATION

The self-reported nature of the data collection approach could have been affected by desirability bias hence distorting the results presented. This is an important issue with regards to a sensitive topic such as HIV/AIDS.

DUALITY OF INTEREST

The authors declare no conflict of interest and had not received funding from any source.

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